IFWO

RAW SEQUENCE LISTING DATE: 08/27/2004
PATENT APPLICATION: **US/10/733,816** TIME: 16:54:18

Input Set : **N:\Crf3\RULE60\10733816.raw**
Output Set: **N:\CRF4\08272004\J733816.raw**

<110> APPLICANT: Harrison, Stephen D.
Hall, John A.
Calderon-Cacia, Maria
Zhong, Ziyang
Fang, Eric Y.
Coit, Doris G.
Nguyen, Steve H.
Medina-Selby, Angelica
<120> TITLE OF INVENTION: GSK3 POLYPEPTIDES
<130> FILE REFERENCE: 59516-162/PP-15876.002/200130.524
<140> CURRENT APPLICATION NUMBER: US/10/733,816
<141> CURRENT FILING DATE: 2003-12-10
<150> PRIOR APPLICATION NUMBER: US/10/211,412
<151> PRIOR FILING DATE: 2002-07-31
<150> PRIOR APPLICATION NUMBER: US09/916,109
<151> PRIOR FILING DATE: 2001-07-25
<160> NUMBER OF SEQ ID NOS: 11
<170> SOFTWARE: FastSEQ for Windows Version 4.0
<210> SEQ ID NO: 1
<211> LENGTH: 420
<212> TYPE: PRT
<213> ORGANISM: Homo sapiens
<400> SEQUENCE: 1

```
Met Ser Gly Arg Pro Arg Thr Thr Ser Phe Ala Glu Ser Cys Lys Pro
 1               5                  10                  15
Val Gln Gln Pro Ser Ala Phe Gly Ser Met Lys Val Ser Arg Asp Lys
            20                  25                  30
Asp Gly Ser Lys Val Thr Thr Val Val Ala Thr Pro Gly Gln Gly Pro
        35                  40                  45
Asp Arg Pro Gln Glu Val Ser Tyr Thr Asp Thr Lys Val Ile Gly Asn
    50                  55                  60
Gly Ser Phe Gly Val Val Tyr Gln Ala Lys Leu Cys Asp Ser Gly Glu
65                  70                  75                  80
Leu Val Ala Ile Lys Lys Val Leu Gln Asp Lys Arg Phe Lys Asn Arg
                85                  90                  95
Glu Leu Gln Ile Met Arg Lys Leu Asp His Cys Asn Ile Val Arg Leu
            100                 105                 110
Arg Tyr Phe Phe Tyr Ser Ser Gly Glu Lys Lys Asp Glu Val Tyr Leu
        115                 120                 125
Asn Leu Val Leu Asp Tyr Val Pro Glu Thr Val Tyr Arg Val Ala Arg
    130                 135                 140
His Tyr Ser Arg Ala Lys Gln Thr Leu Pro Val Ile Tyr Val Lys Leu
145                 150                 155                 160
```

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Input Set : **N:\Crf3\RULE60\10733816.raw**
Output Set: **N:\CRF4\08272004\J733816.raw**

```
45       Tyr Met Tyr Gln Leu Phe Arg Ser Leu Ala Tyr Ile His Ser Phe Gly
46                       165                 170                 175
47       Ile Cys His Arg Asp Ile Lys Pro Gln Asn Leu Leu Leu Asp Pro Asp
48                   180                 185                 190
49       Thr Ala Val Leu Lys Leu Cys Asp Phe Gly Ser Ala Lys Gln Leu Val
50               195                 200                 205
51       Arg Gly Glu Pro Asn Val Ser Tyr Ile Cys Ser Arg Tyr Tyr Arg Ala
52           210                 215                 220
53       Pro Glu Leu Ile Phe Gly Ala Thr Asp Tyr Thr Ser Ser Ile Asp Val
54       225                 230                 235                 240
55       Trp Ser Ala Gly Cys Val Leu Ala Glu Leu Leu Leu Gly Gln Pro Ile
56                       245                 250                 255
57       Phe Pro Gly Asp Ser Gly Val Asp Gln Leu Val Glu Ile Ile Lys Val
58                   260                 265                 270
59       Leu Gly Thr Pro Thr Arg Glu Gln Ile Arg Glu Met Asn Pro Asn Tyr
60               275                 280                 285
61       Thr Glu Phe Lys Phe Pro Gln Ile Lys Ala His Pro Trp Thr Lys Val
62           290                 295                 300
63       Phe Arg Pro Arg Thr Pro Pro Glu Ala Ile Ala Leu Cys Ser Arg Leu
64       305                 310                 315                 320
65       Leu Glu Tyr Thr Pro Thr Ala Arg Leu Thr Pro Leu Glu Ala Cys Ala
66                       325                 330                 335
67       His Ser Phe Phe Asp Glu Leu Arg Asp Pro Asn Val Lys His Pro Asn
68                   340                 345                 350
69       Gly Arg Asp Thr Pro Ala Leu Phe Asn Phe Thr Thr Gln Glu Leu Ser
70               355                 360                 365
71       Ser Asn Pro Pro Leu Ala Thr Ile Leu Ile Pro Pro His Ala Arg Ile
72           370                 375                 380
73       Gln Ala Ala Ala Ser Thr Pro Thr Asn Ala Thr Ala Ala Ser Asp Ala
74       385                 390                 395                 400
75       Asn Thr Gly Asp Arg Gly Gln Thr Asn Asn Ala Ala Ser Ala Ser Ala
76                       405                 410                 415
77       Ser Asn Ser Thr
78                   420
80 <210> SEQ ID NO: 2
81 <211> LENGTH: 394
82 <212> TYPE: PRT
83 <213> ORGANISM: Homo sapiens
84 <400> SEQUENCE: 2
85       Met Glu Tyr Met Pro Met Glu Gly Gly Gly Met Ser Gly Arg Pro Arg
86        1               5                  10                  15
87       Thr Thr Ser Phe Ala Glu Ser Cys Lys Pro Val Gln Gln Pro Ser Ala
88                   20                  25                  30
89       Phe Gly Ser Met Lys Val Ser Arg Asp Lys Asp Gly Ser Lys Val Thr
90               35                  40                  45
91       Thr Val Val Ala Thr Pro Gly Gln Gly Pro Asp Arg Pro Gln Glu Val
92           50                  55                  60
93       Ser Tyr Thr Asp Thr Lys Val Ile Gly Asn Gly Ser Phe Gly Val Val
94       65                  70                  75                  80
```

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Input Set : **N:\Crf3\RULE60\10733816.raw**
Output Set: **N:\CRF4\08272004\J733816.raw**

```
95       Tyr Gln Ala Lys Leu Cys Asp Ser Gly Glu Leu Val Ala Ile Lys Lys
96                       85                  90                  95
97       Val Leu Gln Asp Lys Arg Phe Lys Asn Arg Glu Leu Gln Ile Met Arg
98                   100                 105                 110
99       Lys Leu Asp His Cys Asn Ile Val Arg Leu Arg Tyr Phe Phe Tyr Ser
100                115                 120                 125
101       Ser Gly Glu Lys Lys Asp Glu Val Tyr Leu Asn Leu Val Leu Asp Tyr
102           130                 135                 140
103       Val Pro Glu Thr Val Tyr Arg Val Ala Arg His Tyr Ser Arg Ala Lys
104       145                 150                 155                 160
105       Gln Thr Leu Pro Val Ile Tyr Val Lys Leu Tyr Met Tyr Gln Leu Phe
106                       165                 170                 175
107       Arg Ser Leu Ala Tyr Ile His Ser Phe Gly Ile Cys His Arg Asp Ile
108                   180                 185                 190
109       Lys Pro Gln Asn Leu Leu Leu Asp Pro Asp Thr Ala Val Leu Lys Leu
110                195                 200                 205
111       Cys Asp Phe Gly Ser Ala Lys Gln Leu Val Arg Gly Glu Pro Asn Val
112           210                 215                 220
113       Ser Tyr Ile Cys Ser Arg Tyr Tyr Arg Ala Pro Glu Leu Ile Phe Gly
114       225                 230                 235                 240
115       Ala Thr Asp Tyr Thr Ser Ser Ile Asp Val Trp Ser Ala Gly Cys Val
116                       245                 250                 255
117       Leu Ala Glu Leu Leu Leu Gly Gln Pro Ile Phe Pro Gly Asp Ser Gly
118                   260                 265                 270
119       Val Asp Gln Leu Val Glu Ile Ile Lys Val Leu Gly Thr Pro Thr Arg
120                275                 280                 285
121       Glu Gln Ile Arg Glu Met Asn Pro Asn Tyr Thr Glu Phe Lys Phe Pro
122           290                 295                 300
123       Gln Ile Lys Ala His Pro Trp Thr Lys Val Phe Arg Pro Arg Thr Pro
124       305                 310                 315                 320
125       Pro Glu Ala Ile Ala Leu Cys Ser Arg Leu Leu Glu Tyr Thr Pro Thr
126                       325                 330                 335
127       Ala Arg Leu Thr Pro Leu Glu Ala Cys Ala His Ser Phe Phe Asp Glu
128                   340                 345                 350
129       Leu Arg Asp Pro Asn Val Lys His Pro Asn Gly Arg Asp Thr Pro Ala
130                355                 360                 365
131       Leu Phe Asn Phe Thr Thr Gln Glu Leu Ser Ser Asn Pro Pro Leu Ala
132           370                 375                 380
133       Thr Ile Leu Ile Pro Pro His Ala Arg Ile
134       385                 390
136 <210> SEQ ID NO: 3
137 <211> LENGTH: 361
138 <212> TYPE: PRT
139 <213> ORGANISM: Homo sapiens
140 <400> SEQUENCE: 3
141       Met Glu Tyr Met Pro Met Glu Gly Gly Gly Gly Ser Lys Val Thr Thr
142        1               5                  10                  15
143       Val Val Ala Thr Pro Gly Gln Gly Pro Asp Arg Pro Gln Glu Val Ser
144                   20                  25                  30
```

RAW SEQUENCE LISTING DATE: 08/27/2004
PATENT APPLICATION: **US/10/733,816** TIME: 16:54:18

Input Set : **N:\Crf3\RULE60\10733816.raw**
Output Set: **N:\CRF4\08272004\J733816.raw**

```
145       Tyr Thr Asp Thr Lys Val Ile Gly Asn Gly Ser Phe Gly Val Val Tyr
146                35                  40                  45
147       Gln Ala Lys Leu Cys Asp Ser Gly Glu Leu Val Ala Ile Lys Lys Val
148            50                  55                  60
149       Leu Gln Asp Lys Arg Phe Lys Asn Arg Glu Leu Gln Ile Met Arg Lys
150       65                  70                  75                  80
151       Leu Asp His Cys Asn Ile Val Arg Leu Arg Tyr Phe Phe Tyr Ser Ser
152                       85                  90                  95
153       Gly Glu Lys Lys Asp Glu Val Tyr Leu Asn Leu Val Leu Asp Tyr Val
154                  100                 105                 110
155       Pro Glu Thr Val Tyr Arg Val Ala Arg His Tyr Ser Arg Ala Lys Gln
156                115                 120                 125
157       Thr Leu Pro Val Ile Tyr Val Lys Leu Tyr Met Tyr Gln Leu Phe Arg
158            130                 135                 140
159       Ser Leu Ala Tyr Ile His Ser Phe Gly Ile Cys His Arg Asp Ile Lys
160       145                 150                 155                 160
161       Pro Gln Asn Leu Leu Leu Asp Pro Asp Thr Ala Val Leu Lys Leu Cys
162                       165                 170                 175
163       Asp Phe Gly Ser Ala Lys Gln Leu Val Arg Gly Glu Pro Asn Val Ser
164                  180                 185                 190
165       Tyr Ile Cys Ser Arg Tyr Tyr Arg Ala Pro Glu Leu Ile Phe Gly Ala
166                195                 200                 205
167       Thr Asp Tyr Thr Ser Ser Ile Asp Val Trp Ser Ala Gly Cys Val Leu
168            210                 215                 220
169       Ala Glu Leu Leu Leu Gly Gln Pro Ile Phe Pro Gly Asp Ser Gly Val
170       225                 230                 235                 240
171       Asp Gln Leu Val Glu Ile Ile Lys Val Leu Gly Thr Pro Thr Arg Glu
172                       245                 250                 255
173       Gln Ile Arg Glu Met Asn Pro Asn Tyr Thr Glu Phe Lys Phe Pro Gln
174                  260                 265                 270
175       Ile Lys Ala His Pro Trp Thr Lys Val Phe Arg Pro Arg Thr Pro Pro
176                275                 280                 285
177       Glu Ala Ile Ala Leu Cys Ser Arg Leu Leu Glu Tyr Thr Pro Thr Ala
178            290                 295                 300
179       Arg Leu Thr Pro Leu Glu Ala Cys Ala His Ser Phe Phe Asp Glu Leu
180       305                 310                 315                 320
181       Arg Asp Pro Asn Val Lys His Pro Asn Gly Arg Asp Thr Pro Ala Leu
182                       325                 330                 335
183       Phe Asn Phe Thr Thr Gln Glu Leu Ser Ser Asn Pro Pro Leu Ala Thr
184                  340                 345                 350
185       Ile Leu Ile Pro Pro His Ala Arg Ile
186                355                 360
188 <210> SEQ ID NO: 4
189 <211> LENGTH: 483
190 <212> TYPE: PRT
191 <213> ORGANISM: Homo sapiens
192 <400> SEQUENCE: 4
193       Met Ser Gly Gly Gly Pro Ser Gly Gly Gly Pro Gly Gly Ser Gly Arg
194        1               5                  10                  15
```

RAW SEQUENCE LISTING DATE: 08/27/2004
PATENT APPLICATION: **US/10/733,816** TIME: 16:54:18

Input Set : **N:\Crf3\RULE60\10733816.raw**
Output Set: **N:\CRF4\08272004\J733816.raw**

```
Ala Arg Thr Ser Ser Phe Ala Glu Pro Gly Gly Gly Gly Gly Gly Gly
                20                  25                  30
Gly Gly Gly Pro Gly Gly Ser Ala Ser Gly Pro Gly Gly Thr Gly Gly
            35                  40                  45
Gly Lys Ala Ser Val Gly Ala Met Gly Gly Gly Val Gly Ala Ser Ser
        50                  55                  60
Ser Gly Gly Gly Pro Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Pro
65                  70                  75                  80
Gly Ala Gly Thr Ser Phe Pro Pro Pro Gly Val Lys Leu Gly Arg Asp
                85                  90                  95
Ser Gly Lys Val Thr Thr Val Val Ala Thr Leu Gly Gln Gly Pro Glu
            100                 105                 110
Arg Ser Gln Glu Val Ala Tyr Thr Asp Ile Lys Val Ile Gly Asn Gly
        115                 120                 125
Ser Phe Gly Val Val Tyr Gln Ala Arg Leu Ala Glu Thr Arg Glu Leu
    130                 135                 140
Val Ala Ile Lys Lys Val Leu Gln Asp Lys Arg Phe Lys Asn Arg Glu
145                 150                 155                 160
Leu Gln Ile Met Arg Lys Leu Asp His Cys Asn Ile Val Arg Leu Arg
                165                 170                 175
Tyr Phe Phe Tyr Ser Ser Gly Glu Lys Lys Asp Glu Leu Tyr Leu Asn
            180                 185                 190
Leu Val Leu Glu Tyr Val Pro Glu Thr Val Tyr Arg Val Ala Arg His
        195                 200                 205
Phe Thr Lys Ala Lys Leu Thr Ile Pro Ile Leu Tyr Val Lys Val Tyr
    210                 215                 220
Met Tyr Gln Leu Phe Arg Ser Leu Ala Tyr Ile His Ser Gln Gly Val
225                 230                 235                 240
Cys His Arg Asp Ile Lys Pro Gln Asn Leu Leu Val Asp Pro Asp Thr
                245                 250                 255
Ala Val Leu Lys Leu Cys Asp Phe Gly Ser Ala Lys Gln Leu Val Arg
            260                 265                 270
Gly Glu Pro Asn Val Ser Tyr Ile Cys Ser Arg Tyr Tyr Arg Ala Pro
        275                 280                 285
Glu Leu Ile Phe Gly Ala Thr Asp Tyr Thr Ser Ser Ile Asp Val Trp
    290                 295                 300
Ser Ala Gly Cys Val Leu Ala Glu Leu Leu Leu Gly Gln Pro Ile Phe
305                 310                 315                 320
Pro Gly Asp Ser Gly Val Asp Gln Leu Val Glu Ile Ile Lys Val Leu
                325                 330                 335
Gly Thr Pro Thr Arg Glu Gln Ile Arg Glu Met Asn Pro Asn Tyr Thr
            340                 345                 350
Glu Phe Lys Phe Pro Gln Ile Lys Ala His Pro Trp Thr Lys Val Phe
        355                 360                 365
Lys Ser Arg Thr Pro Pro Glu Ala Ile Ala Leu Cys Ser Ser Leu Leu
    370                 375                 380
Glu Tyr Thr Pro Ser Ser Arg Leu Ser Pro Leu Glu Ala Cys Ala His
385                 390                 395                 400
Ser Phe Phe Asp Glu Leu Arg Cys Leu Gly Thr Gln Leu Pro Asn Asn
```

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 08/27/2004
PATENT APPLICATION: **US/10/733,816** TIME: 16:54:19

Input Set : **N:\Crf3\RULE60\10733816.raw**
Output Set: **N:\CRF4\08272004\J733816.raw**

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:11; Xaa Pos. 2,3,4

VERIFICATION SUMMARY DATE: 08/27/2004
PATENT APPLICATION: **US/10/733,816** TIME: 16:54:19

Input Set : **N:\Crf3\RULE60\10733816.raw**
Output Set: **N:\CRF4\08272004\J733816.raw**

L:464 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:0